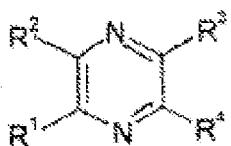


appropriate serial number.

See claims attached. Please do structure search and inventor name(s) search. Display results to show identification of source, and R.N.<sup>\*</sup>, compound name & structure of identified compounds. Search compound of Formula I.

1. (previously presented) A compound of formula (I):



or a pharmaceutically acceptable salt thereof, in which

R<sup>1</sup> and R<sup>2</sup> independently represent phenyl, thiienyl or pyridyl each of which is independently optionally substituted by one or more groups represented by Z;

Z represents a C<sub>1-8</sub> alkyl group optionally substituted by one or more: hydroxy; a C<sub>1-6</sub> alkoxy group optionally substituted by one or more fluoro; a C<sub>3-8</sub> cycloalkyl group; a saturated or partially unsaturated 5-to-8-membered heterocyclic group containing one or more heteroatoms selected from nitrogen, oxygen or sulphur; or by a group NR<sup>10</sup>R<sup>11</sup> (in which R<sup>10</sup> and R<sup>11</sup> independently represent hydrogen, a C<sub>1-6</sub> alkyl group, a C<sub>1-6</sub> alkanoyl group or a C<sub>1-6</sub> alkoxy carbonyl group), or Z represents a C<sub>3-8</sub> cycloalkyl group, a C<sub>1-6</sub> alkoxy group (optionally substituted by one or more fluoro), hydroxy, halo, trifluoromethyl, trifluoromethylthio, trifluoromethylsulphonyl, nitro, a group NR<sup>10</sup>R<sup>11</sup> (in which R<sup>10</sup> and R<sup>11</sup> independently represent hydrogen, a C<sub>1-6</sub> alkyl group, a C<sub>1-6</sub> alkanoyl group or a C<sub>1-6</sub> alkoxy carbonyl group), mono or di C<sub>1-3</sub> alkylamido, C<sub>1-3</sub> alkylthio, C<sub>1-3</sub> alkylsulphonyl, C<sub>1-3</sub> alkylsulphonyloxy, C<sub>1-3</sub> alkoxy carbonyl, carboxy, cyano, carbamoyl, mono or di C<sub>1-3</sub> alkyl carbamoyl, sulphamoyl, acetyl, an aromatic heterocyclic group which is optionally substituted by one or more halo, C<sub>1-4</sub> alkyl, trifluoromethyl or trifluoromethoxy, or Z represents a saturated or partially unsaturated 5-to-8-membered heterocyclic group containing one or more heteroatoms selected from nitrogen, oxygen or sulphur wherein the heterocyclic group is optionally substituted by one or more C<sub>1-3</sub> alkyl, hydroxy, fluoro, benzyl or an amino group -NR<sup>8</sup>R<sup>9</sup> in which R<sup>8</sup> and R<sup>9</sup> independently represent H or C<sub>1-4</sub> alkyl;

10/560862

\*\*\*\*\* INVENTOR RESULTS \*\*\*\*\*

=> d his 123

(FILE 'HCAPLUS' ENTERED AT 10:35:32 ON 25 NOV 2008)  
L23 4 S (L22 AND L12) OR (L12 AND L11)

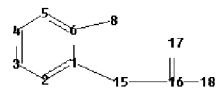
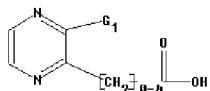
=> d que 123

L9 STR



Structure attributes must be viewed using STN Express query preparation:

Uploading L5.str



chain nodes :

8 9 10 11 15 16 17 18

ring nodes :

1 2 3 4 5 6

chain bonds :

1-15 6-8 9-10 15-16 16-17 16-18

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

6-8 9-10

exact bonds :

1-15 15-16

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-18

isolated ring systems :

containing 1 :

G1:[\*1], [\*2]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
 11:CLASS  
 15:CLASS 16:CLASS 17:CLASS 18:CLASS

L11 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US20070093484/PN  
 L12 573 SEA FILE=REGISTRY SSS FUL L9  
 L22 43 SEA FILE=HCAPLUS ABB=ON PLU=ON "CHENG LEIFENG"/AU  
 L23 4 SEA FILE=HCAPLUS ABB=ON PLU=ON (L22 AND L12) OR (L12 AND  
 L11)

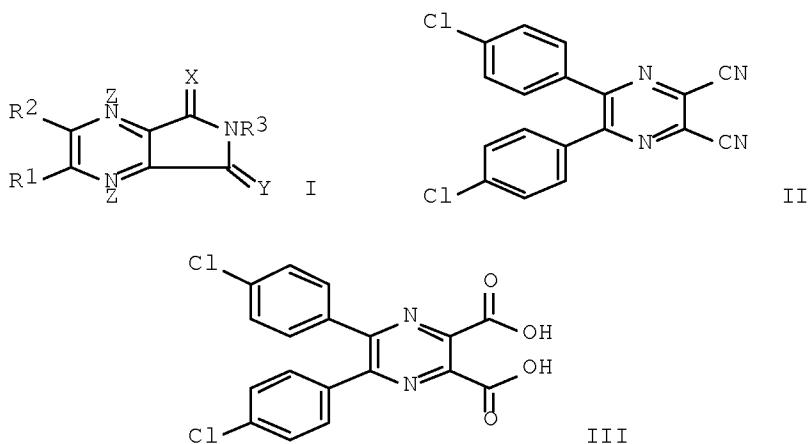
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L23 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2005:493608 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:43904  
 TITLE: Preparation of pyrrolo[3,4-b]pyrazine-5,7(6H)-dione derivatives for treating obesity, psychiatric, and neurological disorders  
 INVENTOR(S): Cheng, Leifeng  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005051953	A2	20050609	WO 2004-GB4934	20041124
WO 2005051953	A3	20050728		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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AU 2004292493	B2	20080124		
CA 2546318	A1	20050609	CA 2004-2546318	20041124
EP 1701958	A2	20060920	EP 2004-798641	20041124
EP 1701958	B1	20070502		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS				
CN 1886405	A	20061227	CN 2004-80034802	20041124

AT 361301	T	20070515	AT 2004-798641	20041124
JP 2007512298	T	20070517	JP 2006-540602	20041124
ES 2285544	T3	20071116	ES 2004-798641	20041124
IN 2006DN02621	A	20070824	IN 2006-DN2621	20060510
US 20070099923	A1	20070503	US 2006-579830	20060517
HK 1096670	A1	20071012	HK 2007-101236	20070201
PRIORITY APPLN. INFO.:			GB 2003-27331	A 20031125
			WO 2004-GB4934	W 20041124

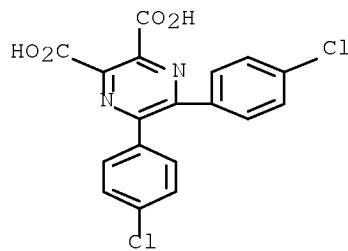
OTHER SOURCE(S): CASREACT 143:43904; MARPAT 143:43904  
GI



AB The title compds. I [R1, R2 = Ph, thienyl, pyridyl, C1-C10-alkyl, C1-C10-alkoxy, C3-C15-cycloalkyl; R3 = C1-C15-alkyl, C3-C15-cycloalkyl, phenylC1-C4-alkyl, heteroaryl, heteroarylC1-C4-alkyl, R4(CH<sub>2</sub>)<sub>n</sub>, R4 = heterocycle, n = 0-4; X, Y = O, S; Z = (O)<sub>n</sub>, n = 0, 1] were prepared and are designed to be used in the treatment of obesity, psychiatric disorders, neurol. disorders, immune, cardiovascular, reproductive, and endocrine disorders, septic shock, diseases related to respiratory and gastrointestinal systems, and extended abuse, addiction and/or relapse indications. As an example, 1,2-bis(4-chlorophenyl)ethane-1,2-dione reacted with diaminomaleonitrile to give pyrazine-2,3-dicarbonitrile II which was treated with KOH/H<sub>2</sub>O<sub>2</sub> in H<sub>2</sub>O, esterified, and hydrolyzed to give dicarboxylic acid III. III condensed with 4-FC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH<sub>2</sub> to give the mono-amide which cyclized to give the desired compound I (R1 = R2 = 4-C<sub>6</sub>H<sub>4</sub>, R3 = 4-FC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, X = Y = O, Z = none). IT 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811441-51-7P, 5,6-Bis(4-chlorophenyl)-3-[(piperidin-1-ylamino)carbonyl]pyrazine-2-carboxylic acid 853578-19-5P 653578-23-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of pyrrolo[3,4-b]pyrazine-5,7(6H)-dione derivs. for treating obesity, psychiatric, neurol., immune, cardiovascular, reproductive, and endocrine disorders, septic shock, respiratory and gastrointestinal disorders)

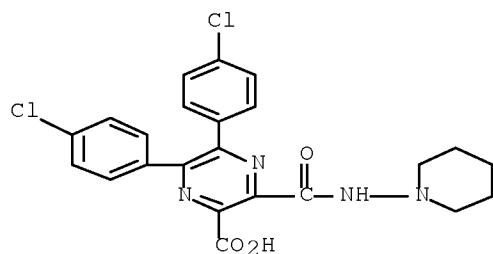
RN 810685-49-5 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



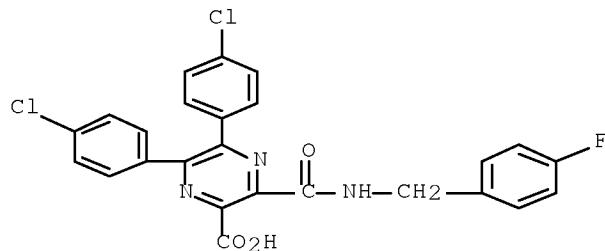
RN 811441-51-7 HCAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]- (CA INDEX NAME)



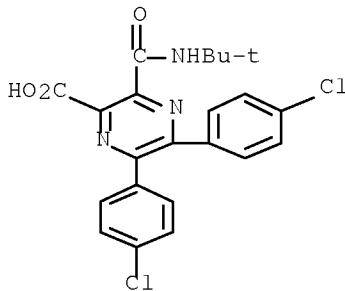
RN 853578-19-5 HCAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(4-fluorophenyl)methyl]amino]carbonyl]- (CA INDEX NAME)



RN 853578-23-1 HCAPLUS

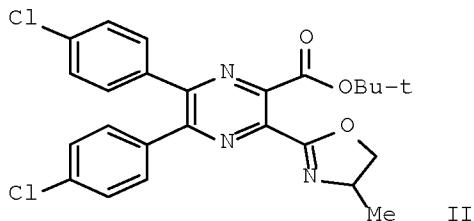
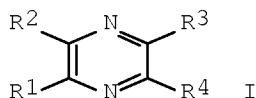
CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1,1-dimethylethyl)amino]carbonyl]- (CA INDEX NAME)



L23 ANSWER 2 OF 4 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2004:1127371 HCPLUS Full-text  
 DOCUMENT NUMBER: 142:56364  
 TITLE: Preparation of 2,3-substituted 5,6-diaryl-pyrazine derivatives as CB1 modulators  
 INVENTOR(S): Cheng, Leifeng; Wilstermann, Michael  
 PATENT ASSIGNEE(S): AstraZeneca Ab, Swed.  
 SOURCE: PCT Int. Appl., 54 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111039	A1	20041223	WO 2004-SE968	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004247614	A1	20041223	AU 2004-247614	20040616
AU 2004247614	B2	20080228		
CA 2527037	A1	20041223	CA 2004-2527037	20040616
EP 1638956	A1	20060329	EP 2004-749010	20040616
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
JP 2006527769	T	20061207	JP 2006-517042	20040616
US 20070093505	A1	20070426	US 2005-561033	20051216
PRIORITY APPLN. INFO.:			GB 2003-14261	A 20030619
			WO 2004-SE968	W 20040616

OTHER SOURCE(S): MARPAT 142:56364  
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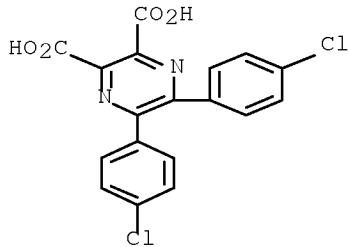
AB Title compds. I [wherein R1, R2 = independently (un)substituted Ph, thienyl, pyridinyl; R3, R4 =  $(CH_2)_nCO_2R_7$ ,  $CH_2OCH_2R_8$ ,  $(CH_2)_qR_9$  with proviso, (un)substituted alkyl, etc.; R7 = (un)substituted cycloalkyl/cyclo/alkyl,  $(CH_2)_a$ phenyl, (un)saturated heterocyclyl; a = 0-4; R8 = (un)substituted alkyl, Ph, (un)saturated aromatic heterocyclyl; n = 0-4; q = 0-4; R9 = (un)substituted cycloalkyl, ph, aromatic heterocyclyl, saturated or partially unsatd. 5-12-membered heterocyclyl; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB1) receptor modulators. Thus, reacting (DL)-alaninol with 5,6-Bis(4-chlorophenyl)-3-(tert-butoxycarbonyl)pyrazine-2-carboxylic acid (preparation given), followed by cyclization gave pyrazine II. I are active at the CB1 receptor ( $IC_{50} < 1 \mu M$ ), most preferred compds. have  $IC_{50} < 200 \text{ nM}$ . For instance, II exhibited an  $IC_{50}$  ( $hCB1$ ) = 1.8 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).

IT 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811436-88-1P, 5,6-Bis(4-chlorophenyl)-3-(tert-butoxycarbonyl)pyrazine-2-carboxylic acid

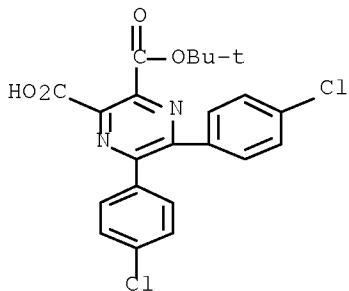
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB1 modulators)

RN 810685-49-5 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



RN 811436-88-1 HCAPLUS  
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-,  
 2-(1,1-dimethylethyl) ester (CA INDEX NAME)

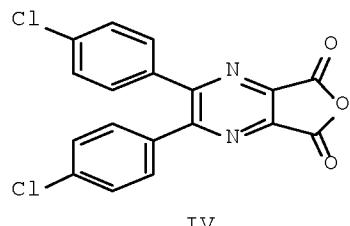
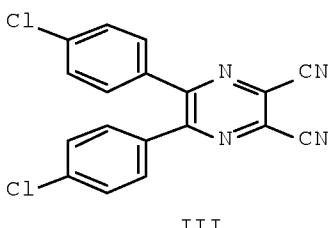


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

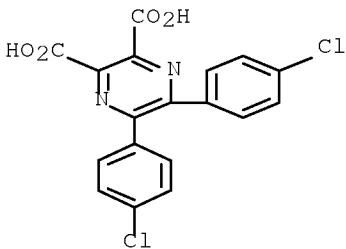
L23 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2004:1127370 HCAPLUS Full-text  
 DOCUMENT NUMBER: 142:56363  
 TITLE: Preparation of 5,6-bis(4-chlorophenyl)-N-piperidin-1-yl-3-(piperidin-1-ylcarbonyl)pyrazine-2-carboxamide for treatment of obesity  
 INVENTOR(S): Cheng, Leifeng  
 PATENT ASSIGNEE(S): AstraZeneca Ab, Swed.  
 SOURCE: PCT Int. Appl., 24 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111038	A1	20041223	WO 2004-SE967	20040616
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RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

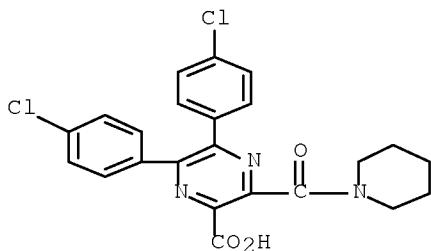
PRIORITY APPLN. INFO.: GB 2003-14049 A 20030618  
 GI



- AB 5,6-Bis(4-chlorophenyl)-N-piperidin-1-yl-3-(piperidin-1-yl-carbonyl)pyrazine-2-carboxamide (I) was prepared by reacting 4-ClC<sub>6</sub>H<sub>4</sub>CHO with NaCN/EtOH which gave 1,2-bis(4-chlorophenyl)-2-hydroxyethanone (II). II was oxidized to the ethane-1,2-dione which was condensed with diaminomaleonitrile to give pyrazine III. III was converted to the corresponding 2,3-dicarboxylic acid which was treated with AcCl to give furo[3,4-b]pyrazine-5,7-dione IV. IV was then subsequently reacted with piperidine/MeCN and oxalyl chloride/1-piperidinamine/CH<sub>2</sub>C<sub>12</sub> to give the title compound that is intended to be used to treat obesity, psychiatric and neurol. disorders.
- IT 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 810685-51-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of bis(chlorophenyl)piperidinylpyrazinecarboxamide derivative for treating obesity, psychiatric disorders, and neurol. disorders)
- RN 810685-49-5 HCAPLUS
- CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



- RN 810685-51-9 HCAPLUS
- CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-piperidinylcarbonyl)- (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT.

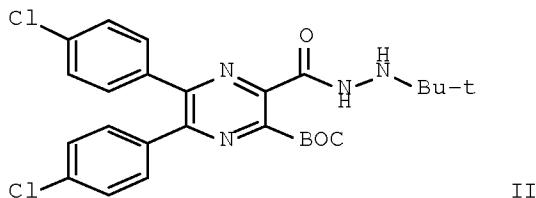
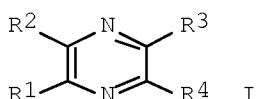
L23 ANSWER 4 OF 4 HCPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2004:1127366 HCPLUS Full-text  
DOCUMENT NUMBER: 142:56362  
TITLE: Preparation of 3-substituted  
5,6-diaryl-pyrazine-2-carboxamide and 2-sulfonamide  
derivatives as cannabinoid receptor 1 (CB1) modulators  
INVENTOR(S): Cheng, Leifeng  
PATENT ASSIGNEE(S): Astrazeneca AB, Swed.  
SOURCE: PCT Int. Appl., 120 pp.  
CODEN: PIXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111034	A1	20041223	WO 2004-SE970	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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CA 2527035	A1	20041223	CA 2004-2527035	20040616
EP 1638953	A1	20060329	EP 2004-749012	20040616
EP 1638953	B1	20080827		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
BR 2004011508	A	20060725	BR 2004-11508	20040616
CN 1809554	A	20060726	CN 2004-80017200	20040616
JP 2006527771	T	20061207	JP 2006-517044	20040616
AT 406361	T	20080915	AT 2004-749012	20040616
NO 2005005919	A	20060216	NO 2005-5919	20051213
MX 2005PA13711	A	20060308	MX 2005-PA13711	20051215
KR 2006023152	A	20060313	KR 2005-724072	20051215
US 20070093484	A1	20070426	US 2005-560862	20051215
PRIORITY APPLN. INFO.:			GB 2003-14057	A 20030618

OTHER SOURCE(S):

MARPAT 142:56362

GI



AB Title compds. I [wherein R1, R2 = independently (un)substituted Ph, thiienyl, pyridinyl; R3 = X-Y-NR5R6; X = absent, CO, or SO2; Y = absent, NH optionally substituted by an alkyl group; R5, R6 = independently (un)substituted amino/alkyl, (CH<sub>2</sub>)<sub>r</sub>(phenyl)<sub>s</sub>, (un)saturated 5-8-membered heterocyclyl; R5 = H and R6 = defined above; or R5NR6 = (un)substituted (un)saturated 5-8-membered heterocyclyl; r = 0-4; s = 1 when r = 0, otherwise s = 1 or 2; R5NR6 = (un)substituted (un)saturated 5-8-membered heterocyclyl; R4 = (CH<sub>2</sub>)<sub>n</sub>CO<sub>2</sub>R7; n = 0-4; R7 = (un)substituted cycloalkyl/cyclo/alkyl, (CH<sub>2</sub>)<sub>n</sub>phenyl, saturated or partially unsatd. 5-8-membered heterocyclyl, CONH<sub>2</sub> and derivs.; n = defined as above; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB1) receptor modulators. For example, reacting 3-(tert-Butoxycarbonyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid (preparation given) with tert-butylhydrazine hydrochloride gave pyrazine II. I are active at the CB1 receptor (IC<sub>50</sub> < 1 μM), most preferred compds. have IC<sub>50</sub> < 200 nM. For instance, II exhibited an IC<sub>50</sub> (hCB1) = 1.8 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).

IT 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811436-88-1P, 3-(tert-Butoxycarbonyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid 811441-05-1P, 5,6-Bis(4-chlorophenyl)-3-(ethoxycarbonyl)pyrazine-2-carboxylic acid 811441-55-1P, 5,6-Bis(4-methylphenyl)pyrazine-2,3-dicarboxylic acid 811441-57-3P, 3-(tert-Butoxycarbonyl)-5,6-bis(4-methylphenyl)pyrazine-2-carboxylic acid 811441-59-5P, 3-(Ethoxycarbonyl)-5,6-bis(4-methylphenyl)pyrazine-2-carboxylic acid 811441-81-3P, 5-(4-Chlorophenyl)-6-(4-methylphenyl)pyrazine-2,3-dicarboxylic acid 811441-84-6P, 3-(tert-Butoxycarbonyl)-5-(4-chlorophenyl)-6-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-85-7P, 3-(tert-Butoxycarbonyl)-6-(4-chlorophenyl)-5-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-88-0P, 5-(4-Chlorophenyl)-3-(ethoxycarbonyl)-6-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-89-1P, 6-(4-Chlorophenyl)-3-(ethoxycarbonyl)-5-(4-methylphenyl)pyrazine-2-carboxylic acid

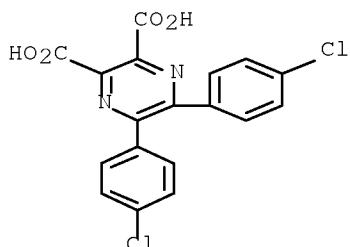
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide

and 2-sulfonamide derivs. as CB1 modulators)

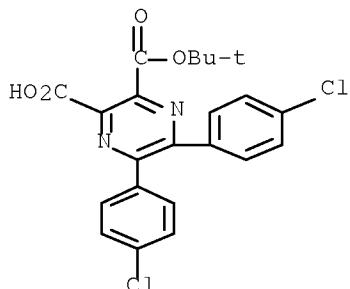
RN 810685-49-5 HCAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



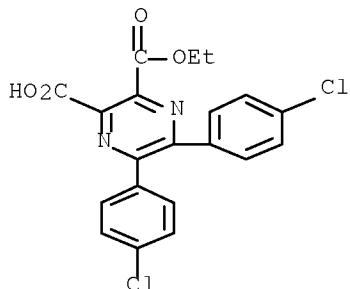
RN 811436-88-1 HCAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, 2-(1,1-dimethylethyl) ester (CA INDEX NAME)



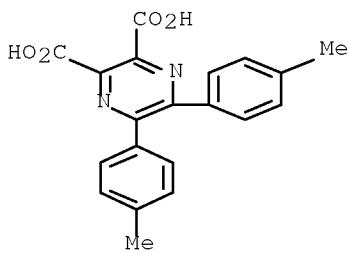
RN 811441-05-1 HCAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, 2-ethyl ester (CA INDEX NAME)

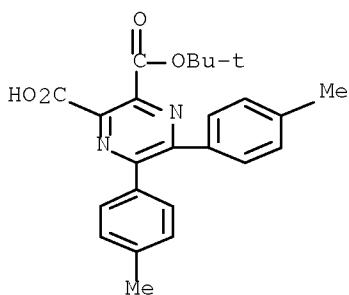


RN 811441-55-1 HCAPLUS

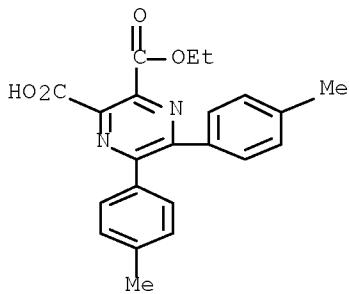
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 811441-57-3 HCAPLUS

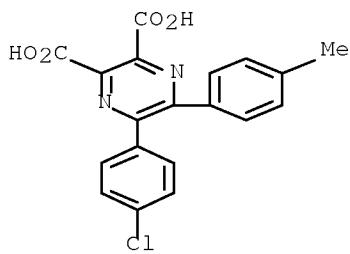
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-,  
2-(1,1-dimethylethyl) ester (CA INDEX NAME)

RN 811441-59-5 HCAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-, 2-ethyl ester  
(CA INDEX NAME)

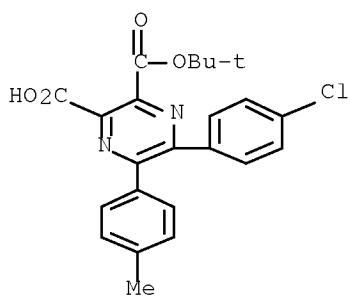
RN 811441-81-3 HCAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)- (CA  
INDEX NAME)



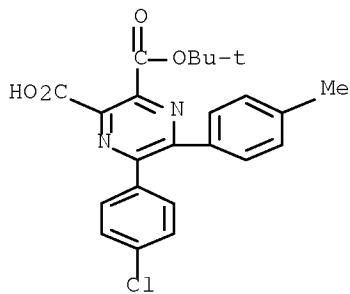
RN 811441-84-6 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 3-(1,1-dimethylethyl) ester (CA INDEX NAME)



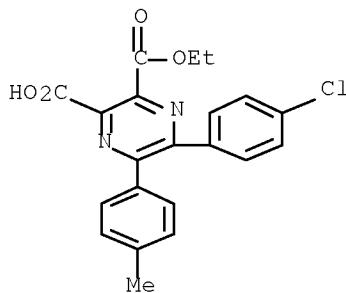
RN 811441-85-7 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 2-(1,1-dimethylethyl) ester (CA INDEX NAME)



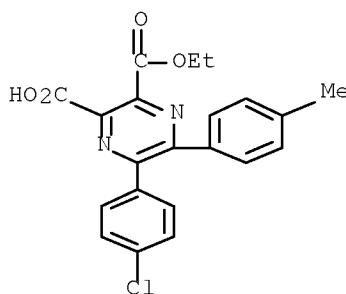
RN 811441-88-0 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 3-ethyl ester (CA INDEX NAME)



RN 811441-89-1 HCAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 2-ethyl ester (CA INDEX NAME)



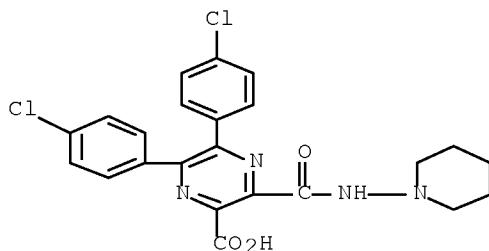
IT 811441-51-7, 5,6-Bis(4-chlorophenyl)-3-[(piperidin-1-yl)amino]carbonyl]pyrazine-2-carboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

RN 811441-51-7 HCAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]- (CA INDEX NAME)



REFERENCE COUNT:

6

THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/560862

\*\*\*\*\* QUERY RESULTS \*\*\*\*\*

=> d his 124

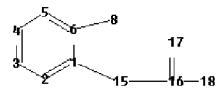
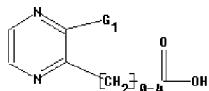
(FILE 'HCAPLUS' ENTERED AT 10:35:32 ON 25 NOV 2008)  
L24 5 S L21 NOT L23

=> d que 124

L9 STR



Uploading L5.str



chain nodes :

8 9 10 11 15 16 17 18

ring nodes :

1 2 3 4 5 6

chain bonds :

1-15 6-8 9-10 15-16 16-17 16-18

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

6-8 9-10

exact bonds :

1-15 15-16

normalized bonds :

10/560862

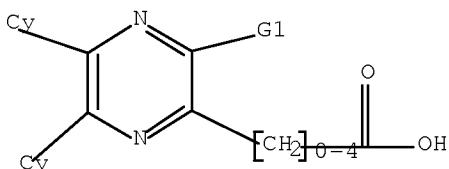
1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-18  
isolated ring systems :  
containing 1 :

G1:[\*1], [\*2]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
11:CLASS  
15:CLASS 16:CLASS 17:CLASS 18:CLASS

L11 1 SEA FILE=HCAPLUS ABB=ON PLU=ON US20070093484/PN  
L12 573 SEA FILE=REGISTRY SSS FUL L9  
L18 STR



G1 [@1], [@2]

Structure attributes must be viewed using STN Express query preparation:

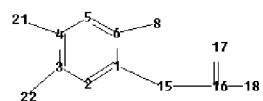
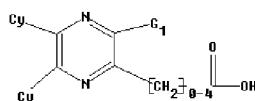
Uploading L7.str

$\text{O}^{\frac{1}{\infty}}$

$\text{SO}_2^2$

$\text{O}^{\frac{1}{\infty}}$

$\text{O}^{\frac{2}{\infty}}$



chain nodes :

8 9 10 11 15 16 17 18 21 22

ring nodes :

1 2 3 4 5 6

chain bonds :  
 1-15 3-22 4-21 6-8 9-10 15-16 16-17 16-18  
 ring bonds :  
 1-2 1-6 2-3 3-4 4-5 5-6  
 exact/norm bonds :  
 3-22 4-21 6-8 9-10  
 exact bonds :  
 1-15 15-16  
 normalized bonds :  
 1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-18  
 isolated ring systems :  
 containing 1 :

G1:[\*1], [\*2]

Match level :  
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
 11:CLASS  
 15:CLASS 16:CLASS 17:CLASS 18:CLASS 21:Atom 22:Atom

L20 22 SEA FILE=REGISTRY SUB=L12 SSS FUL L18  
 L21 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L20  
 L22 43 SEA FILE=HCAPLUS ABB=ON PLU=ON "CHENG LEIFENG"/AU  
 L23 4 SEA FILE=HCAPLUS ABB=ON PLU=ON (L22 AND L12) OR (L12 AND  
 L11)  
 L24 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 NOT L23

=> d 124 1-5 ibib abs hitstr hitind

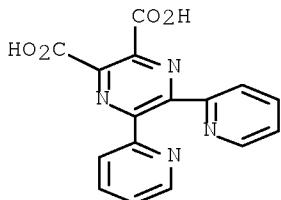
L24 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2003:911996 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:331239  
 TITLE: Dimensionality changes in crystalline complexes  
 induced by exposure to air: Solid-state studies using  
 single crystal and powder X-ray diffraction methods  
 Neels, Antonia; Alfonso, Montserrat; Mantero, Deborah  
 Gonzalez; Stoeckli-evans, Helen  
 AUTHOR(S): Institut de Chimie, Universite de Neuchatel,  
 Neuchatel, CH-2007, Switz.  
 CORPORATE SOURCE:  
 SOURCE: Chimia (2003), 57(10), 619-622  
 CODEN: CHIMAD; ISSN: 0009-4293  
 PUBLISHER: Swiss Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB When they come into contact with air, coordination compds. can often change  
 their appearance. For instance, the color of the compound can change as  
 transparent crystals become opaque microcryst. solids. This visible  
 transformation of the compound is frequently accompanied by structural  
 modifications due to loss of solvent mols. or in the reverse case, the  
 reaction with H<sub>2</sub>O from the air. Often, the dimensionality of the structures  
 also varies and this aspect is demonstrated for three pairs of Cu(II)  
 complexes (1-dimensional → 0-dimensional, 1-dimensional → 2-dimensional and  
 3-dimensional → 2D). The complementary use of single crystal and powder x-  
 ray diffraction methods is indispensable for the evaluation of these  
 structural changes.

IT 374115-72-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for preparation of copper methylbis(pyridyl)pyrazine complex)

RN 374115-72-7 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl- (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 75

IT 374115-72-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for preparation of copper methylbis(pyridyl)pyrazine complex)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 5 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:749418 HCPLUS Full-text

DOCUMENT NUMBER: 135:378975

TITLE: Hydrogen bonding in the inner-salt zwitterion and in  
 two different charged forms of  
 5,6-bis(2-pyridyl)pyrazine-2,3-dicarboxylic acid

AUTHOR(S): Alfonso, Montserrat; Wang, Yi; Stoeckli-Evans, Helen  
 CORPORATE SOURCE: Institut de Chimie, Universite de Neuchatel,  
 Neuchatel, CH-2007, Switz.

SOURCE: Acta Crystallographica, Section C: Crystal Structure  
 Communications (2001), C57(10), 1184-1188  
 CODEN: ACSCEE; ISSN: 0108-2701

PUBLISHER: Munksgaard International Publishers Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 5,6-Bis(2-pyridyl)pyrazine-2,3-dicarboxylic acid exists as an inner-salt zwitterion, 3-carboxy-5-(2-pyridinio)-6-(2-pyridyl)pyrazine-2-carboxylate, (Ia), C<sub>16</sub>H<sub>10</sub>N<sub>4</sub>O<sub>4</sub>. The adjacent pyridine and pyridinium rings are almost coplanar due to the presence of an intramol. H bond involving the pyridine N atom and the NH H atom of the pyridinium group. In the crystal of (Ia), symmetry-related mols. are H bonded via the carboxylic acid OH group and one of the carboxylate O atoms to form a polymer, which exhibits a channel-type structure. In the HCl, HClO<sub>4</sub> and HPF<sub>6</sub> salts, 6-carboxy-5-carboxylatopyrazine-2,3-diylid-2-pyridinium chloride 2.25-hydrate, (II), C<sub>16</sub>H<sub>11</sub>N<sub>4</sub>O<sub>4</sub><sup>+</sup>·Cl<sup>-</sup>·2.25H<sub>2</sub>O, 6-carboxy-5-carboxylatopyrazine-2,3-diylid-2-pyridinium perchlorate trihydrate, (IIIa), C<sub>16</sub>H<sub>11</sub>N<sub>4</sub>O<sub>4</sub><sup>+</sup>·ClO<sub>4</sub><sup>-</sup>·3H<sub>2</sub>O, and 6-carboxy-5-carboxylatopyrazine-2,3-diylid-2-pyridinium hexafluorophosphate trihydrate, (IIIb), C<sub>16</sub>H<sub>11</sub>N<sub>4</sub>O<sub>4</sub><sup>+</sup>·PF<sub>6</sub><sup>-</sup>·3H<sub>2</sub>O, both pyridine rings are protonated. In the perchlorate form, and in the isomorphous hexafluorophosphate form, the mol. possesses C<sub>2</sub> symmetry, with has a sym. intramol. H bond involving the adjacent carboxylate and carboxylic acid substituents. In the crystals of the chloride and perchlorate (or hexafluorophosphate) salts, H-bonded polymers are formed

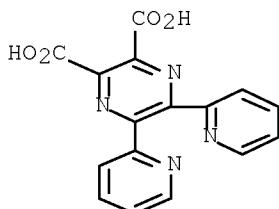
which are three-dimensional and 1-dimensional, resp. Crystallog. data are given.

IT 374115-73-8 374115-74-9 374115-75-0

RL: PRP (Properties)  
(crystal structure of)

RN 374115-73-8 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl-, hydrochloride, hydrate  
(4:4:9) (CA INDEX NAME)



● HCl

● 9/4 H<sub>2</sub>O

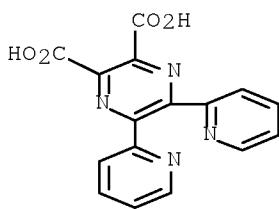
RN 374115-74-9 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl-, perchlorate, hydrate  
(1:1:3) (CA INDEX NAME)

CM 1

CRN 374115-72-7

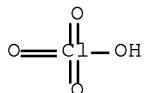
CMF C16 H10 N4 O4



CM 2

CRN 7601-90-3

CMF Cl H O4



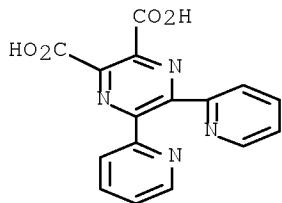
RN 374115-75-0 HCAPLUS

CN Phosphate(1-), hexafluoro-, hydrogen, compd. with  
5,6-di-2-pyridinyl-2,3-pyrazinedicarboxylic acid (1:1), trihydrate (9CI)  
(CA INDEX NAME)

CM 1

CRN 374115-72-7

CMF C16 H10 N4 O4

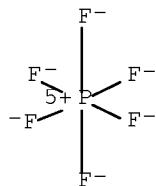


CM 2

CRN 16940-81-1

CMF F6 P . H

CCI CCS

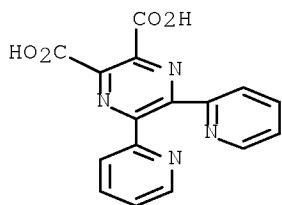
● H<sup>+</sup>

IT 374115-72-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(crystal structure of inner-salt zwitterionic)

RN 374115-72-7 HCAPLUS

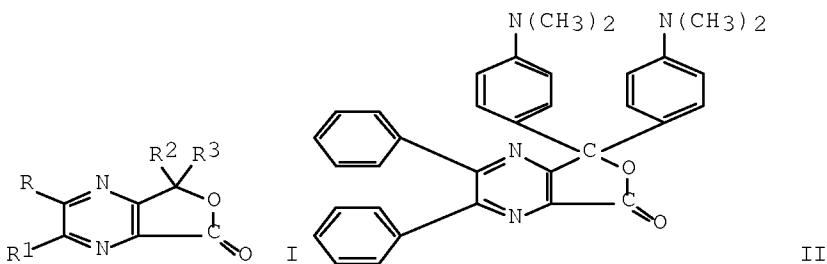
CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl- (CA INDEX NAME)



CC 75-8 (Crystallography and Liquid Crystals)  
 Section cross-reference(s): 28  
 IT 374115-73-8 374115-74-9 374115-75-0  
 RL: PRP (Properties)  
 (crystal structure of)  
 IT 374115-72-7P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (crystal structure of inner-salt zwitterionic)  
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 5 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1987:111426 HCPLUS Full-text  
 DOCUMENT NUMBER: 106:111426  
 ORIGINAL REFERENCE NO.: 106:18079a,18082a  
 TITLE: Chromogenic compounds for pressure-sensitive and  
 thermal copying processes  
 INVENTOR(S): Hall, Nigel  
 PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK  
 SOURCE: Eur. Pat. Appl., 52 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 192328	A1	19860827	EP 1986-300305	19860117
EP 192328	B1	19900509		
R: CH, DE, FR, GB, IT, LI				
JP 61195164	A	19860829	JP 1986-31036	19860217
PRIORITY APPLN. INFO.:			GB 1985-4631	A 19850222
OTHER SOURCE(S):	MARPAT	106:111426		
GI				



AB Chromogenic pyrazine derivs. I [R, R1 = H, alkenyl, alkoxy, aryl, etc. provided that R and R1 are not H at the same time; R2 and R3 = heterocyclic ring having aryl group annealled through a conjugated N linkage a homocyclic aryl group having substituent NR4R5; R4, R5 = H, R4 and R5 together with the N to which they are joined may form an heterocyclic ring provided R4 and R5 = H at the same time] are described for thermal recording materials and pressure-sensitive copying papers with improved lightfastness. Thus, a thermal recording paper was prepared by coating with a composition containing II and bisphenol A as developer to give green colored images with excellent lightfastness.

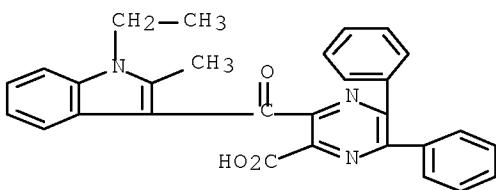
IT 105490-93-5P 105490-95-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of chromogenic pyrazine derivative)

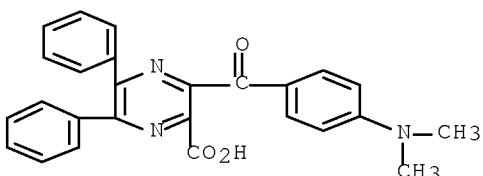
RN 105490-93-5 HCAPLUS

CN 2-Pyrazinecarboxylic acid, 3-[(1-ethyl-2-methyl-1H-indol-3-yl)carbonyl]-5,6-diphenyl- (CA INDEX NAME)



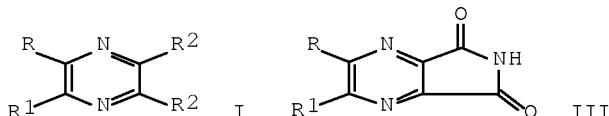
RN 105490-95-7 HCAPLUS

CN 2-Pyrazinecarboxylic acid, 3-[4-(dimethylamino)benzoyl]-5,6-diphenyl- (CA INDEX NAME)

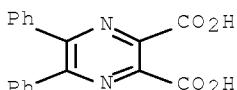


IC ICM C07D491-048  
 ICS B41M005-12  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 28  
 IT 105490-93-8P 105490-94-6P 105490-95-7P 105490-96-8P  
 105490-97-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, in preparation of chromogenic pyrazine derivative)

L24 ANSWER 4 OF 5 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1982:68939 HCPLUS [Full-text](#)  
 DOCUMENT NUMBER: 96:68939  
 ORIGINAL REFERENCE NO.: 96:11329a,11332a  
 TITLE: Synthesis of pyrazinedicarboximides from diaminomaleonitrile  
 AUTHOR(S): Tsuda, Tadataka; Fujishima, Katsuhiro; Ueda, Hiroo  
 CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Osaka, 591, Japan  
 SOURCE: Agricultural and Biological Chemistry (1981), 45(9), 2129-30  
 CODEN: ABCHA6; ISSN: 0002-1369  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 96:68939  
 GI



AB Hydrolysis of pyrazines I ( $R = H, Me, Ph, 4-ClC_6H_4, 3,4-C_12C_6H_3, 4-MeOC_6H_4$ ;  $R_1 = H, Me, Ph$ ;  $R_2 = CN$ ), prepared from diaminomaleonitrile, followed by esterification gave I ( $R_2 = CO_2Me$ ) (II). Amidn. of II with NH<sub>3</sub> followed by intramol. cyclocondensation gave the title compds. (III). II ( $R = Ph, R_1 = H, R_2 = CO_2Me$ ) showed bactericidal activity superior to that of phenazine oxide.  
 IT 53954-53-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and esterification of)  
 RN 53954-53-3 HCPLUS  
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



CC 28-17 (Heterocyclic Compounds (More Than One Hetero Atom))  
 Section cross-reference(s): 5  
 IT 89-01-0P 5521-60-8P 39784-64-0P 41110-52-5P 53954-53-3P  
 80356-76-9P 80356-77-0P 80356-78-1P 80356-79-2P 80356-80-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and esterification of)

L24 ANSWER 5 OF 5 HCPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 1975:58411 HCPLUS Full-text  
 DOCUMENT NUMBER: 82:58411  
 ORIGINAL REFERENCE NO.: 82:9355a,9358a  
 TITLE: Thermooxidative degradation of polyquinoxalines and related model compounds  
 AUTHOR(S): Kane, James J.; Ghosh, Subrata; Conley, Robert T.  
 CORPORATE SOURCE: Dep. Chem., Wright State Univ., Dayton, OH, USA  
 SOURCE: Papers presented at [the] Meeting - American Chemical Society, Division of Organic Coatings and Plastics Chemistry (1973), 33(1), 466-73  
 CODEN: ACOCAO; ISSN: 0096-512X

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

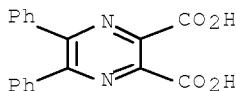
AB Solution oxidation by aqueous alkaline permanganate of model compds. for the poly(etherquinoxaline) (I) [52885-62-8] showed that the carbocyclic ring adjacent to the heterocyclic pyrazine ring was more susceptible to oxidation. 2-Phenylquinoxaline [5021-43-2] gave 2-phenylpyrazine-5,6-dicarboxylic acid [39784-64-0], and similarly, 2,3-diphenylpyrazine-5,6-dicarboxylic acid [53954-53-3] was prepared from 2,3-diphenylquinoxaline [1684-14-6], 2,2',3,3'-tetraphenyl-6,6'-biquinoxaline [16111-01-6], 2,2',3,3'-tetraphenyl-6,6'-oxydiquinoxaline [16478-99-2], and 2,3-diphenylbenzo[g]quinoxaline [36305-72-3]. Pyrolytic oxidation of phenylquinoxalines gave products similar to those obtained from benzimides, suggesting that benzhetrocyclic systems underwent oxidative degradation by similar mechanisms, with initial oxygenation of the carbocyclic ring adjacent to the heterocyclic one. Catalytic oxidation of the quinoxaline system involved oxygenated intermediates similar to pyrazine dicarboxylic acids. Nitrile absorptions were observed in ir spectra of oxidative pyrolysis products of I films.

IT 53954-53-3P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, on oxidation of phenylquinoxalines)

RN 53954-53-3 HCPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



CC 35-6 (Synthetic High Polymers)

IT 53954-53-3P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, on oxidation of phenylquinoxalines)

10/560862

\*\*\*\*\* SEARCH HISTORY \*\*\*\*\*

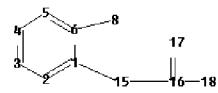
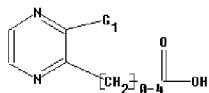
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D  
L2                   0 SEA SSS SAM L1  
L3                   STRUCTURE UPLOADED  
D  
L4                   0 SEA SSS SAM L3  
L5                   STRUCTURE UPLOADED  
D  
L6                   50 SEA SSS SAM L5  
L7                   STRUCTURE UPLOADED  
D  
L8                   50 SEA SSS SAM L7  
L9                   STRUCTURE UPLOADED  
D

Uploading L5.str



chain nodes :

8 9 10 11 15 16 17 18

ring nodes :

1 2 3 4 5 6

chain bonds :

1-15 6-8 9-10 15-16 16-17 16-18

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

6-8 9-10

exact bonds :

1-15 15-16

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-18

isolated ring systems :

containing 1 :

G1:[\*1],[\*2]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
11:CLASS  
15:CLASS 16:CLASS 17:CLASS 18:CLASS

L10 22 SEA SSS SAM L9

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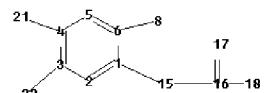
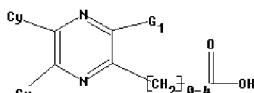
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L13 STRUCTURE UPLOADED  
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L15 4 SEA SUB=L12 SSS FUL L13  
D SCAN

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L16 509 SEA ABB=ON PLU=ON L12  
L17 95 SEA ABB=ON PLU=ON L16 AND PHARMAC?/SC, SX

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L18 STRUCTURE UPLOADED  
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Uploading L7.str



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chain nodes :
8 9 10 11 15 16 17 18 21 22
ring nodes :
1 2 3 4 5 6
chain bonds :
1-15 3-22 4-21 6-8 9-10 15-16 16-17 16-18
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6
exact/norm bonds :
3-22 4-21 6-8 9-10
exact bonds :
1-15 15-16
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-18

```

10/560862

isolated ring systems :  
containing 1 :

G1:[\*1], [\*2]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
11:CLASS  
15:CLASS 16:CLASS 17:CLASS 18:CLASS 21:Atom 22:Atom

L19 3 SEA SUB=L12 SSS SAM L18  
D SCAN

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E CHENG LEIFENG/AU

L22 43 SEA ABB=ON PLU=ON "CHENG LEIFENG"/AU

L23 4 SEA ABB=ON PLU=ON (L22 AND L12) OR (L12 AND L11)

L24 5 SEA ABB=ON PLU=ON L21 NOT L23  
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D QUE L23

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D QUE L24

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D L24 1-5 IBIB ABS HITSTR HITIND

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